

Supplementary Appendix

This appendix has been provided by the authors to give readers additional information about their work.

Supplement to: Freedman ND, Park Y, Abnet CC, Hollenbeck AR, Sinha R. Association of coffee drinking with total and cause-specific mortality. *N Engl J Med* 2012;366:1891-904.

Supplementary Appendix

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Supplementary Table 1: Effect of covariate adjustment on risk estimates for coffee with total mortality in men and women of the NIH-AARP Diet and Health Study

Coffee intake	None	<1 cup/day	1 cup/day	2 or 3 cups/day	4 or 5 cups/day	≥6 cups/day	p-trend
Men							
No. in cohort	21,080	34,710	33,961	97,144	32,084	10,139	
Deaths, n (%) [*]	2766 (13.1)	4931 (14.2)	5049 (14.9)	14,115 (14.5)	4966 (15.5)	1904 (18.8)	
Age adjusted	1.00	1.02 (0.98-1.07)	0.99 (0.94-1.03)	1.03 (0.99-1.07)	1.21 (1.15-1.27)	1.60 (1.51-1.69)	<0.001
+ Smoking	1.00	0.96 (0.92-1.00)	0.88 (0.84-0.92)	0.81 (0.78-0.85)	0.80 (0.76-0.84)	0.84 (0.79-0.89)	<0.001
+ Smoking, health status	1.00	0.95 (0.90-0.99)	0.89 (0.85-0.93)	0.84 (0.81-0.88)	0.85 (0.81-0.89)	0.88 (0.83-0.94)	<0.001
+ Smoking, health, alcohol	1.00	0.98 (0.94-1.03)	0.93 (0.88-0.97)	0.88 (0.85-0.92)	0.88 (0.84-0.92)	0.91 (0.85-0.97)	<0.001
Multivariate adjusted model [†]	1.00	0.99 (0.95-1.04)	0.94 (0.90-0.99)	0.90 (0.86-0.93)	0.88 (0.84-0.93)	0.90 (0.85-0.96)	<0.001
Propensity score adjusted model [‡]	1.00	0.98 (0.94-1.03)	0.94 (0.90-0.99)	0.91 (0.87-0.95)	0.89 (0.85-0.94)	0.91 (0.86-0.97)	<0.001
Women							
No. in cohort	20,865	30,085	31,355	68,250	17,434	5152	
Deaths, n (%) [*]	2161 (10.4)	3221 (10.7)	3388 (10.8)	7140 (10.5)	2099 (12.0)	775 (15.0)	
Age adjusted	1.00	0.99 (0.94-1.05)	0.93 (0.88-0.98)	0.93 (0.89-0.98)	1.13 (1.07-1.20)	1.51 (1.39-1.64)	<0.001
+ Smoking	1.00	0.97 (0.92-1.02)	0.89 (0.84-0.94)	0.76 (0.73-0.80)	0.72 (0.68-0.77)	0.77 (0.70-0.83)	<0.001
+ Smoking, health status	1.00	0.97 (0.92-1.02)	0.91 (0.86-0.96)	0.82 (0.78-0.86)	0.80 (0.75-0.85)	0.84 (0.77-0.91)	<0.001
+ Smoking, health, alcohol	1.00	1.00 (0.95-1.06)	0.94 (0.89-0.99)	0.86 (0.82-0.90)	0.83 (0.78-0.88)	0.87 (0.80-0.94)	<0.001
Multivariate adjusted model [†]	1.00	1.01 (0.96-1.07)	0.95 (0.90-1.01)	0.87 (0.83-0.92)	0.84 (0.79-0.90)	0.85 (0.78-0.93)	<0.001
Propensity score adjusted model [‡]	1.00	1.01 (0.96-1.07)	0.97 (0.92-1.02)	0.89 (0.85-0.94)	0.84 (0.79-0.90)	0.85 (0.78-0.92)	<0.001

* Proportion of cohort participants in specified category dying during follow-up.

† Multivariate analyses were adjusted for the following factors at baseline: age; body-mass index; race or ethnic group; level of education; alcohol consumption; the number of cigarettes smoked per day, use or nonuse of pipes or cigars, and time of smoking cessation (<1 year, 1 to <5 years, 5 to <10 years, or ≥10 years before baseline); health status; diabetes (yes vs. no); marital status; physical activity; total energy intake; consumption of fruits, vegetables, red meat, white meat, and saturated fat; and use or nonuse of vitamin supplements. In women, risk estimates were also adjusted for use or nonuse of postmenopausal hormone therapy.

‡ We created propensity scores for each category of coffee intake using the covariates used in the multivariate adjusted model (age; body-mass index; race or ethnic group; level of education; alcohol consumption; the number of cigarettes smoked per day, use or nonuse of pipes or cigars, and time of smoking cessation (<1 year, 1 to <5 years, 5 to <10 years, or ≥10 years before baseline); health status; diabetes (yes vs. no); marital status; physical activity; total energy intake; consumption of fruits, vegetables, red meat, white meat, and saturated fat; use or nonuse of vitamin supplements; and for women, use or nonuse of postmenopausal hormone therapy). Risk estimates for coffee drinking were then adjusted by the six generated propensity scores.

Supplementary Table 2: Associations of total, caffeinated, and decaffeinated coffee intake with total and cause-specific mortality in men of the NIH-AARP Diet and Health Study

Outcome	Coffee intake	None		<1 cup/day		1 cup/day		2 or 3 cups/day		≥4 cups/day		p-trend
		n (%) [†]	HR [‡]	n (%) [†]	HR [‡] (95%CI)							
All causes	Total	2766 (13.1)	1.00	4931 (14.2)	0.99 (0.95-1.04)	5049 (14.9)	0.94 (0.90-0.99)	14115 (14.5)	0.90 (0.86-0.93)	6870 (16.3)	0.89 (0.85-0.93)	<0.001
	Caffeinated	2766 (13.1)	1.00	2416 (14.7)	1.00 (0.95-1.06)	3102 (14.6)	0.93 (0.89-0.98)	10197 (14.6)	0.90 (0.86-0.94)	5439 (16.4)	0.90 (0.85-0.94)	<0.001
	Decaffeinated	2766 (13.1)	1.00	2047 (13.2)	0.95 (0.89-1.00)	1723 (14.9)	0.94 (0.88-1.00)	3385 (13.9)	0.87 (0.83-0.92)	1174 (15.0)	0.86 (0.80-0.92)	<0.001
Cancer	Total	946 (4.5)	1.00	1729 (5.0)	1.01 (0.93-1.09)	1824 (5.4)	0.96 (0.89-1.04)	5804 (6.0)	1.00 (0.93-1.07)	3099 (7.3)	1.05 (0.97-1.13)	0.04
	Caffeinated	946 (4.5)	1.00	852 (5.2)	1.02 (0.93-1.12)	1129 (5.3)	0.96 (0.88-1.05)	4289 (6.1)	1.02 (0.95-1.10)	2468 (7.4)	1.05 (0.97-1.14)	0.05
	Decaffeinated	946 (4.5)	1.00	719 (4.6)	0.96 (0.87-1.06)	633 (5.5)	0.98 (0.89-1.09)	1323 (5.4)	0.93 (0.86-1.01)	499 (6.4)	0.97 (0.87-1.08)	0.35
Heart disease	Total	712 (3.4)	1.00	1193 (3.4)	0.93 (0.85-1.02)	1243 (3.7)	0.92 (0.84-1.01)	3353 (3.5)	0.86 (0.79-0.94)	1626 (3.9)	0.88 (0.80-0.96)	0.005
	Caffeinated	712 (3.4)	1.00	572 (3.5)	0.92 (0.83-1.03)	763 (3.6)	0.91 (0.82-1.01)	2396 (3.4)	0.86 (0.79-0.94)	1290 (3.9)	0.89 (0.81-0.98)	0.03
	Decaffeinated	712 (3.4)	1.00	511 (3.3)	0.92 (0.82-1.03)	427 (3.7)	0.92 (0.81-1.03)	815 (3.3)	0.84 (0.76-0.93)	280 (3.6)	0.84 (0.73-0.97)	0.002
Respiratory disease	Total	169 (0.8)	1.00	351 (1.0)	1.05 (0.87-1.27)	352 (1.0)	0.93 (0.77-1.11)	1046 (1.1)	0.83 (0.70-0.98)	594 (1.4)	0.83 (0.69-0.99)	<0.001
	Caffeinated	169 (0.8)	1.00	187 (1.1)	1.04 (0.84-1.29)	227 (1.1)	0.94 (0.77-1.15)	759 (1.1)	0.82 (0.69-0.97)	488 (1.5)	0.86 (0.71-1.03)	0.02
	Decaffeinated	169 (0.8)	1.00	122 (0.8)	0.95 (0.75-1.20)	111 (1.0)	0.90 (0.71-1.15)	252 (1.0)	0.90 (0.74-1.10)	88 (1.1)	0.75 (0.58-0.98)	0.04
Stroke	Total	125 (0.6)	1.00	221 (0.6)	0.99 (0.79-1.24)	222 (0.7)	0.92 (0.73-1.15)	555 (0.6)	0.84 (0.68-1.02)	204 (0.5)	0.70 (0.55-0.88)	<0.001
	Caffeinated	125 (0.6)	1.00	91 (0.6)	0.86 (0.66-1.13)	130 (0.6)	0.88 (0.68-1.13)	374 (0.5)	0.79 (0.64-0.98)	155 (0.5)	0.68 (0.53-0.87)	0.002
	Decaffeinated	125 (0.6)	1.00	104 (0.7)	1.05 (0.81-1.36)	82 (0.7)	0.97 (0.73-1.29)	156 (0.6)	0.93 (0.73-1.18)	42 (0.5)	0.78 (0.55-1.11)	0.11
Injuries and accidents	Total	113 (0.5)	1.00	186 (0.5)	0.97 (0.77-1.23)	202 (0.6)	1.02 (0.80-1.29)	492 (0.5)	0.88 (0.71-1.09)	218 (0.5)	0.84 (0.66-1.06)	0.03
	Caffeinated	113 (0.5)	1.00	88 (0.5)	0.96 (0.72-1.27)	111 (0.5)	0.90 (0.69-1.17)	366 (0.5)	0.90 (0.73-1.12)	166 (0.5)	0.80 (0.62-1.03)	0.09
	Decaffeinated	113 (0.5)	1.00	84 (0.5)	1.00 (0.75-1.33)	75 (0.6)	1.11 (0.83-1.49)	107 (0.4)	0.78 (0.60-1.02)	44 (0.6)	0.96 (0.67-1.37)	0.18
Diabetes	Total	87 (0.4)	1.00	165 (0.5)	1.07 (0.82-1.39)	154 (0.5)	1.00 (0.76-1.31)	310 (0.3)	0.75 (0.59-0.96)	134 (0.3)	0.75 (0.57-1.00)	<0.001
	Caffeinated	87 (0.4)	1.00	86 (0.5)	1.17 (0.87-1.59)	97 (0.5)	1.04 (0.78-1.40)	217 (0.3)	0.77 (0.59-1.00)	103 (0.3)	0.79 (0.59-1.07)	0.003
	Decaffeinated	87 (0.4)	1.00	63 (0.4)	0.93 (0.67-1.30)	49 (0.4)	0.90 (0.63-1.28)	79 (0.3)	0.72 (0.52-0.98)	29 (0.4)	0.77 (0.50-1.19)	0.05
Infections	Total	68 (0.3)	1.00	112 (0.3)	0.95 (0.70-1.29)	124 (0.4)	1.03 (0.76-1.4)	276 (0.3)	0.83 (0.63-1.10)	105 (0.2)	0.67 (0.49-0.93)	0.001
	Caffeinated	68 (0.3)	1.00	65 (0.4)	1.11 (0.79-1.57)	74 (0.3)	1.00 (0.71-1.39)	193 (0.3)	0.81 (0.61-1.08)	83 (0.3)	0.68 (0.49-0.95)	0.002
	Decaffeinated	68 (0.3)	1.00	34 (0.2)	0.68 (0.45-1.04)	43 (0.4)	1.05 (0.72-1.55)	74 (0.3)	0.92 (0.66-1.29)	15 (0.2)	0.55 (0.31-0.96)	0.17
Other	Total	546 (2.6)	1.00	974 (2.8)	1.02 (0.92-1.13)	928 (2.7)	0.92 (0.82-1.02)	2279 (2.3)	0.81 (0.74-0.89)	890 (2.1)	0.71 (0.64-0.80)	<0.001
	Caffeinated	546 (2.6)	1.00	475 (2.9)	1.05 (0.93-1.19)	571 (2.7)	0.92 (0.82-1.04)	1603 (2.3)	0.80 (0.72-0.89)	686 (2.1)	0.71 (0.63-0.80)	<0.001
	Decaffeinated	546 (2.6)	1.00	410 (2.6)	0.97 (0.85-1.10)	303 (2.6)	0.86 (0.74-0.99)	579 (2.4)	0.82 (0.73-0.92)	177 (2.3)	0.76 (0.64-0.91)	<0.001

* Use of caffeinated or decaffeinated coffee was unavailable for 7821 men.

[†]Proportion of cohort participants in specified category dying during follow-up.

[‡]Multivariate analyses were adjusted for the following factors at baseline: age; body-mass index; race or ethnic group; level of education; alcohol consumption; the number of cigarettes smoked per day, use or nonuse of pipes or cigars, and time of smoking cessation (<1 year, 1 to <5 years, 5 to <10 years, or ≥10 years before baseline); health status; diabetes (yes vs. no); marital status; physical activity; total energy intake; consumption of fruits, vegetables, red meat, white meat, and saturated fat; and use or nonuse of vitamin supplements. In addition, risk estimates for death from cancer were adjusted for history of cancer (other than nonmelanoma skin cancer) in a first-degree relative (yes vs. no).

Supplementary Table 3: Associations of total, caffeinated, and decaffeinated coffee intake with total and cause-specific mortality in women of the NIH-AARP Diet and Health Study

Outcome	Coffee intake	None		<1 cup/day		1 cup/day		2 or 3 cups/day		≥4 cups/day		p-trend
		Type of coffee*	n (%) [†]	HR [‡]	n (%) [†]	HR [‡] (95%CI)						
All causes	Total	2161 (10.4)	1.00	3221 (10.7)	1.01 (0.96-1.07)	3388 (10.8)	0.95 (0.90-1.01)	7140 (10.5)	0.87 (0.83-0.92)	2874 (12.7)	0.85 (0.80-0.90)	<0.001
	Caffeinated	2161 (10.4)	1.00	1336 (11.9)	1.09 (1.01-1.16)	1973 (10.8)	0.95 (0.90-1.01)	5015 (10.7)	0.88 (0.84-0.93)	2262 (13.3)	0.87 (0.81-0.92)	<0.001
	Decaffeinated	2161 (10.4)	1.00	1577 (9.6)	0.95 (0.89-1.01)	1577 (9.6)	0.95 (0.88-1.02)	1276 (10.6)	0.85 (0.80-0.90)	506 (10.6)	0.81 (0.73-0.89)	<0.001
Cancer	Total	783 (3.8)	1.00	1153 (3.8)	0.99 (0.90-1.08)	1313 (4.2)	1.01 (0.92-1.1)	3110 (4.6)	0.98 (0.90-1.06)	1391 (6.2)	1.02 (0.93-1.12)	0.80
	Caffeinated	783 (3.8)	1.00	436 (3.9)	0.96 (0.86-1.08)	766 (4.2)	1.00 (0.90-1.10)	2177 (4.6)	0.98 (0.90-1.06)	1100 (6.5)	1.04 (0.95-1.15)	0.33
	Decaffeinated	783 (3.8)	1.00	599 (3.6)	0.97 (0.87-1.08)	490 (4.1)	1.00 (0.89-1.12)	815 (4.2)	0.97 (0.88-1.07)	247 (5.2)	0.98 (0.85-1.13)	0.66
Heart disease	Total	461 (2.2)	1.00	673 (2.2)	1.00 (0.89-1.13)	683 (2.2)	0.91 (0.81-1.03)	1379 (2.0)	0.85 (0.76-0.95)	505 (2.2)	0.77 (0.67-0.87)	<0.001
	Caffeinated	461 (2.2)	1.00	285 (2.5)	1.10 (0.95-1.28)	407 (2.2)	0.95 (0.83-1.08)	954 (2.0)	0.85 (0.76-0.95)	398 (2.3)	0.79 (0.68-0.90)	<0.001
	Decaffeinated	461 (2.2)	1.00	327 (2.0)	0.93 (0.81-1.07)	250 (2.1)	0.86 (0.74-1.01)	362 (1.9)	0.83 (0.72-0.95)	82 (1.7)	0.68 (0.54-0.87)	<0.001
Respiratory disease	Total	187 (0.9)	1.00	315 (1.0)	1.09 (0.91-1.31)	279 (0.9)	0.84 (0.69-1.01)	698 (1.0)	0.79 (0.67-0.93)	312 (1.4)	0.68 (0.57-0.83)	<0.001
	Caffeinated	187 (0.9)	1.00	172 (1.5)	1.39 (1.13-1.72)	181 (1.0)	0.90 (0.73-1.11)	516 (1.1)	0.81 (0.68-0.96)	246 (1.4)	0.69 (0.57-0.84)	<0.001
	Decaffeinated	187 (0.9)	1.00	123 (0.7)	0.90 (0.72-1.14)	94 (0.8)	0.80 (0.62-1.02)	151 (0.8)	0.71 (0.57-0.88)	52 (1.1)	0.69 (0.50-0.93)	0.001
Stroke	Total	115 (0.6)	1.00	191 (0.6)	1.15 (0.91-1.45)	168 (0.5)	0.89 (0.70-1.13)	369 (0.5)	0.93 (0.75-1.15)	123 (0.5)	0.82 (0.63-1.08)	0.03
	Caffeinated	115 (0.6)	1.00	71 (0.6)	1.16 (0.86-1.56)	91 (0.5)	0.84 (0.64-1.11)	249 (0.5)	0.92 (0.73-1.15)	96 (0.6)	0.85 (0.64-1.13)	0.17
	Decaffeinated	115 (0.6)	1.00	97 (0.6)	1.08 (0.82-1.42)	66 (0.5)	0.90 (0.66-1.22)	108 (0.6)	0.99 (0.75-1.29)	22 (0.5)	0.77 (0.48-1.22)	0.31
Injuries and accidents	Total	57 (0.3)	1.00	91 (0.3)	1.11 (0.80-1.55)	114 (0.4)	1.27 (0.92-1.76)	153 (0.2)	0.77 (0.56-1.06)	47 (0.2)	0.62 (0.42-0.93)	<0.001
	Caffeinated	57 (0.3)	1.00	41 (0.4)	1.33 (0.89-2.00)	64 (0.3)	1.23 (0.86-1.77)	111 (0.2)	0.81 (0.58-1.13)	34 (0.2)	0.59 (0.38-0.92)	<0.001
	Decaffeinated	57 (0.3)	1.00	45 (0.3)	1.02 (0.69-1.51)	46 (0.4)	1.34 (0.91-1.99)	35 (0.2)	0.65 (0.42-0.99)	12 (0.3)	0.81 (0.43-1.53)	0.05
Diabetes	Total	71 (0.3)	1.00	95 (0.3)	1.00 (0.73-1.36)	93 (0.3)	0.91 (0.67-1.25)	140 (0.2)	0.77 (0.57-1.03)	47 (0.2)	0.76 (0.51-1.12)	0.03
	Caffeinated	71 (0.3)	1.00	42 (0.4)	1.15 (0.78-1.69)	48 (0.3)	0.87 (0.60-1.26)	99 (0.2)	0.83 (0.60-1.13)	39 (0.2)	0.85 (0.56-1.29)	0.19
	Decaffeinated	71 (0.3)	1.00	44 (0.3)	0.88 (0.60-1.29)	40 (0.3)	0.95 (0.64-1.42)	38 (0.2)	0.72 (0.48-1.08)	8 (0.2)	0.65 (0.31-1.37)	0.08
Infections	Total	65 (0.3)	1.00	77 (0.3)	0.82 (0.59-1.15)	96 (0.3)	0.94 (0.68-1.29)	152 (0.2)	0.69 (0.51-0.94)	58 (0.3)	0.69 (0.48-1.00)	0.02
	Caffeinated	65 (0.3)	1.00	38 (0.3)	1.07 (0.71-1.60)	52 (0.3)	0.88 (0.61-1.28)	106 (0.2)	0.71 (0.51-0.98)	46 (0.3)	0.73 (0.49-1.08)	0.02
	Decaffeinated	65 (0.3)	1.00	33 (0.2)	0.67 (0.44-1.02)	40 (0.3)	1.01 (0.68-1.50)	41 (0.2)	0.68 (0.46-1.02)	11 (0.2)	0.68 (0.36-1.30)	0.12
Other	Total	422 (2.0)	1.00	626 (2.1)	1.02 (0.90-1.16)	642 (2.0)	0.94 (0.83-1.07)	1139 (1.7)	0.79 (0.71-0.89)	391 (1.7)	0.74 (0.64-0.85)	<0.001
	Caffeinated	422 (2.0)	1.00	251 (2.2)	1.09 (0.93-1.28)	364 (2.0)	0.93 (0.81-1.08)	803 (1.7)	0.82 (0.72-0.92)	303 (1.8)	0.76 (0.65-0.88)	<0.001
	Decaffeinated	422 (2.0)	1.00	309 (1.9)	0.95 (0.82-1.10)	250 (2.1)	0.95 (0.81-1.11)	291 (1.5)	0.74 (0.63-0.86)	72 (1.5)	0.70 (0.55-0.91)	<0.001

* Use of caffeinated or decaffeinated coffee was unavailable for 6263 women.

† Proportion of cohort participants in specified category dying during follow-up.

‡ Multivariate analyses were adjusted for the following factors at baseline: age; body-mass index; race or ethnic group; level of education; alcohol consumption; the number of cigarettes smoked per day, use or nonuse of pipes or cigars, and time of smoking cessation (<1 year, 1 to <5 years, 5 to <10 years, or ≥10 years before baseline); health status; diabetes (yes vs. no); marital status; physical activity; total energy intake; consumption of fruits, vegetables, red meat, white meat, and saturated fat; use or nonuse of vitamin supplements; and use or nonuse of postmenopausal hormone therapy. In addition, risk estimates for death from cancer were adjusted for history of cancer (other than nonmelanoma skin cancer) in a first-degree relative (yes vs. no).

Supplementary Table 4: Associations of coffee intake with total mortality in men of the NIH-AARP Diet and Health Study, by baseline subgroup.

Coffee intake	None		<1 cup/day		1 cup/day		2 or 3 cups/day		≥4 cups/day		p-trend	p-interaction [‡]
Category	n (%) [*]	HR [†]	n (%) [*]	HR [†] (95%CI)								
All	2766 (13)	1.00	4931 (14)	0.99 (0.95-1.04)	5049 (15)	0.94 (0.90-0.99)	14115 (15)	0.90 (0.86-0.93)	6870 (16)	0.89 (0.85-0.93)	<0.001	
Years 0 to <4 of follow-up	493 (2)	1.00	908 (3)	1.02 (0.91-1.14)	945 (3)	0.99 (0.89-1.11)	2469 (3)	0.90 (0.81-0.99)	1197 (3)	0.86 (0.77-0.96)	<0.001	
Years 4 to <9 of follow-up	1093 (5)	1.00	1942 (6)	0.98 (0.91-1.06)	1977 (6)	0.93 (0.86-1.00)	5742 (6)	0.91 (0.85-0.98)	2818 (7)	0.90 (0.84-0.97)	0.002	0.30
Years 9 to 14 of follow-up	1180 (6)	1.00	2081 (7)	0.99 (0.92-1.06)	2127 (7)	0.93 (0.86-1.00)	5904 (7)	0.88 (0.82-0.93)	2855 (8)	0.89 (0.83-0.95)	<0.001	
<60 years at baseline	654 (7)	1.00	1095 (8)	1.09 (0.99-1.20)	759 (7)	0.94 (0.84-1.04)	2640 (7)	0.92 (0.84-1.01)	1839 (10)	0.93 (0.84-1.02)	0.002	
60 to <65 years	773 (14)	1.00	1292 (13)	0.94 (0.86-1.03)	1314 (14)	0.95 (0.86-1.03)	3890 (14)	0.88 (0.82-0.96)	1996 (17)	0.84 (0.77-0.92)	<0.001	0.68
≥65 years	1339 (22)	1.00	2544 (22)	0.98 (0.92-1.05)	2976 (22)	0.93 (0.87-1.00)	7585 (23)	0.89 (0.84-0.94)	3035 (27)	0.90 (0.84-0.96)	<0.001	
Never smoker	1092 (10)	1.00	1234 (10)	0.96 (0.88-1.04)	1015 (10)	0.95 (0.87-1.03)	1821 (9)	0.90 (0.84-0.98)	410 (8)	0.83 (0.74-0.93)	<0.001	
Former smoker	1267 (16)	1.00	2888 (16)	0.99 (0.93-1.06)	3161 (16)	0.94 (0.88-1.00)	8773 (15)	0.88 (0.83-0.94)	3472 (14)	0.86 (0.80-0.91)	<0.001	<0.001
Current smoker	285 (28)	1.00	593 (30)	1.05 (0.91-1.21)	631 (28)	0.93 (0.80-1.07)	2918 (28)	0.92 (0.81-1.04)	2788 (28)	0.96 (0.85-1.09)	0.66	
No Diabetes	2291 (12)	1.00	4093 (13)	0.99 (0.94-1.05)	4235 (14)	0.95 (0.90-1.00)	12015 (13)	0.91 (0.87-0.95)	5953 (15)	0.91 (0.86-0.95)	<0.001	<0.001
Diabetes	475 (27)	1.00	838 (28)	0.99 (0.88-1.11)	814 (28)	0.92 (0.82-1.03)	2100 (27)	0.85 (0.77-0.95)	917 (27)	0.81 (0.72-0.91)	<0.001	
BMI <18.5	44 (23)	1.00	65 (26)	1.14 (0.75-1.72)	54 (24)	0.85 (0.54-1.33)	120 (20)	0.69 (0.47-1.02)	108 (36)	1.14 (0.76-1.7)	0.84	
BMI 18.5 to <25	841 (12)	1.00	1384 (13)	0.95 (0.87-1.04)	1471 (14)	0.93 (0.85-1.01)	3993 (15)	0.89 (0.83-0.97)	2158 (19)	0.90 (0.82-0.97)	0.01	
BMI 25 to <30	1138 (12)	1.00	2175 (13)	1.01 (0.94-1.09)	2246 (14)	0.92 (0.85-0.99)	6392 (13)	0.89 (0.83-0.95)	2948 (14)	0.88 (0.82-0.94)	<0.001	<0.001
BMI 30 to <35	480 (15)	1.00	800 (15)	0.95 (0.85-1.07)	848 (17)	0.97 (0.86-1.08)	2460 (16)	0.89 (0.81-0.99)	1107 (16)	0.86 (0.77-0.96)	<0.001	
BMI ≥35	209 (20)	1.00	393 (23)	1.02 (0.86-1.21)	323 (24)	1.02 (0.85-1.22)	873 (21)	0.88 (0.75-1.02)	408 (21)	0.85 (0.72-1.01)	0.002	
Non alcohol drinker	1190 (14)	1.00	1228 (17)	1.02 (0.94-1.10)	1107 (18)	0.97 (0.90-1.06)	2792 (19)	0.94 (0.88-1.01)	1792 (20)	0.91 (0.84-0.98)	0.002	
>0 to 1 drink/day	1044 (11)	1.00	2428 (13)	0.98 (0.92-1.06)	2406 (13)	0.93 (0.86-1.00)	6341 (13)	0.88 (0.82-0.94)	2935 (15)	0.89 (0.83-0.96)	<0.001	0.76
>1 to 3 drinks/day	260 (12)	1.00	643 (12)	0.93 (0.81-1.08)	858 (14)	0.94 (0.82-1.08)	2708 (13)	0.87 (0.77-0.99)	1114 (13)	0.88 (0.77-1.01)	0.03	
>3 drinks/day	272 (20)	1.00	632 (21)	0.96 (0.83-1.11)	678 (19)	0.86 (0.74-0.99)	2274 (18)	0.83 (0.73-0.94)	1029 (19)	0.82 (0.71-0.94)	<0.001	
Fair/Poor health	1254 (10)	1.00	2053 (10)	0.97 (0.90-1.04)	2180 (11)	0.92 (0.86-0.99)	6503 (11)	0.91 (0.86-0.97)	3129 (12)	0.92 (0.86-0.99)	0.02	
Good health	980 (15)	1.00	1826 (16)	0.99 (0.92-1.07)	1962 (18)	0.96 (0.88-1.03)	5356 (17)	0.90 (0.84-0.96)	2644 (19)	0.89 (0.83-0.97)	<0.001	<0.001
Excellent/ very good health	502 (32)	1.00	999 (34)	1.02 (0.92-1.14)	848 (34)	0.93 (0.83-1.04)	2131 (33)	0.85 (0.77-0.94)	1040 (33)	0.81 (0.72-0.90)	<0.001	
Low red meat	1501 (13)	1.00	2481 (13)	0.91 (0.85-0.97)	2462 (14)	0.89 (0.83-0.95)	6305 (13)	0.84 (0.79-0.89)	2790 (15)	0.84 (0.78-0.9)	<0.001	0.70
High red meat	1265 (13)	1.00	2450 (16)	1.09 (1.02-1.16)	2587 (16)	1.01 (0.94-1.08)	7810 (16)	0.96 (0.90-1.02)	4080 (17)	0.95 (0.89-1.01)	<0.001	
Low white meat	1510 (14)	1.00	2638 (16)	1.02 (0.95-1.08)	2749 (17)	0.95 (0.89-1.02)	7846 (16)	0.90 (0.85-0.96)	4277 (19)	0.91 (0.85-0.96)	<0.001	0.23
High white meat	1256 (12)	1.00	2293 (13)	0.96 (0.90-1.03)	2300 (13)	0.92 (0.86-0.99)	6269 (13)	0.88 (0.83-0.94)	2593 (13)	0.87 (0.81-0.93)	<0.001	

Low fruit	1218 (14)	1.00	2131 (15)	0.99 (0.92-1.06)	2345 (16)	0.94 (0.88-1.01)	7817 (15)	0.88 (0.83-0.94)	4615 (18)	0.89 (0.83-0.95)	<0.001	0.16
High fruit	1548 (13)	1.00	2800 (14)	0.99 (0.93-1.05)	2704 (14)	0.94 (0.88-1.00)	6298 (14)	0.91 (0.86-0.96)	2255 (14)	0.88 (0.82-0.94)	<0.001	
Low vegetables	1391 (13)	1.00	2492 (15)	1.00 (0.94-1.07)	2589 (16)	0.95 (0.89-1.02)	7607 (16)	0.92 (0.87-0.97)	4053 (18)	0.92 (0.87-0.98)	<0.001	0.01
High vegetables	1375 (13)	1.00	2439 (13)	0.98 (0.91-1.05)	2460 (14)	0.93 (0.87-0.99)	6508 (13)	0.87 (0.82-0.93)	2817 (14)	0.85 (0.80-0.91)	<0.001	
Vitamin supplement, non-user	1206 (14)	1.00	2046 (15)	0.97 (0.9-1.04)	2202 (16)	0.91 (0.84-0.97)	6226 (15)	0.88 (0.82-0.93)	3058 (17)	0.87 (0.81-0.93)	<0.001	0.25
Vitamin supplement, user	1560 (12)	1.00	2885 (14)	1.01 (0.95-1.08)	2847 (14)	0.97 (0.91-1.03)	7889 (14)	0.91 (0.86-0.96)	3812 (16)	0.91 (0.85-0.97)	<0.001	

* Proportion of cohort participants in specified category dying during follow-up.

† Multivariate analyses were adjusted for the following factors at baseline: age; body-mass index; race or ethnic group; level of education; alcohol consumption; the number of cigarettes smoked per day, use or nonuse of pipes or cigars, and time of smoking cessation (<1 year, 1 to <5 years, 5 to <10 years, or ≥10 years before baseline); health status; diabetes (yes vs. no); marital status; physical activity; total energy intake; consumption of fruits, vegetables, red meat, white meat, and saturated fat; and use or nonuse of vitamin supplements.

‡ P-values for interactions were computed by likelihood ratio tests comparing Cox proportional hazards models with and without cross-product terms for each level of baseline stratifying variable with coffee intake as an ordinal variable. P-values for the lag-analysis come from testing the addition of a cross-product term for time with coffee intake.

Supplementary Table 5: Associations of coffee intake with total mortality in women of the NIH-AARP Diet and Health Study, by baseline subgroup.

Coffee intake	None		<1 cup/day		1 cup/day		2 or 3 cups/day		≥4 cups/day		p-trend	p-interaction [‡]
Category	n (%) [*]	HR [†]	n (%) [*]	HR [†] (95%CI)								
All	2161 (10)	1.00	3221 (11)	1.01 (0.96-1.07)	3388 (11)	0.95 (0.90-1.01)	7140 (10)	0.87 (0.83-0.92)	2874 (13)	0.85 (0.80-0.90)	<0.001	
Years 0 to <4 of follow-up	367 (2)	1.00	548 (2)	0.98 (0.86-1.12)	552 (2)	0.89 (0.78-1.02)	1110 (2)	0.79 (0.70-0.89)	437 (2)	0.73 (0.63-0.84)	<0.001	
Years 4 to <9 of follow-up	857 (4)	1.00	1291 (4)	1.03 (0.94-1.12)	1325 (4)	0.95 (0.87-1.03)	2881 (4)	0.89 (0.82-0.96)	1157 (5)	0.84 (0.77-0.93)	<0.001	0.07
Years 9 to 14 of follow-up	937 (5)	1.00	1382 (5)	1.01 (0.93-1.10)	1511 (5)	0.98 (0.91-1.07)	3149 (5)	0.90 (0.83-0.97)	1280 (6)	0.90 (0.82-0.98)	<0.001	
<60 years at baseline	568 (6)	1.00	751 (6)	1.00 (0.90-1.12)	523 (5)	0.83 (0.74-0.94)	1411 (5)	0.84 (0.76-0.93)	700 (7)	0.81 (0.72-0.91)	<0.001	
60 to <65 years	596 (11)	1.00	881 (11)	1.01 (0.91-1.12)	955 (11)	0.98 (0.88-1.08)	2019 (10)	0.87 (0.79-0.96)	881 (13)	0.85 (0.77-0.95)	<0.001	0.97
≥65 years	997 (17)	1.00	1589 (17)	1.02 (0.94-1.10)	1910 (17)	0.99 (0.92-1.07)	3710 (16)	0.89 (0.83-0.96)	1293 (20)	0.86 (0.79-0.93)	<0.001	
Never smoker	1082 (8)	1.00	1299 (8)	0.99 (0.92-1.08)	1345 (8)	0.96 (0.88-1.04)	1868 (7)	0.84 (0.78-0.91)	404 (7)	0.85 (0.76-0.95)	<0.001	
Former smoker	723 (12)	1.00	1373 (12)	1.01 (0.92-1.11)	1409 (12)	0.92 (0.84-1.01)	3018 (10)	0.87 (0.80-0.94)	899 (11)	0.83 (0.75-0.92)	<0.001	0.002
Current smoker	355 (21)	1.00	546 (23)	1.09 (0.96-1.25)	634 (23)	1.06 (0.93-1.21)	2252 (21)	0.98 (0.87-1.09)	1571 (20)	0.91 (0.81-1.02)	<0.001	
No Diabetes	1787 (9)	1.00	2678 (10)	1.01 (0.95-1.07)	2900 (10)	0.97 (0.91-1.03)	6306 (10)	0.88 (0.83-0.92)	2623 (12)	0.85 (0.79-0.90)	<0.001	0.04
Diabetes	374 (24)	1.00	543 (25)	1.08 (0.95-1.24)	488 (22)	0.90 (0.78-1.03)	834 (24)	0.92 (0.81-1.04)	251 (25)	0.86 (0.73-1.02)	0.01	
BMI <18.5	41 (13)	1.00	91 (20)	1.65 (1.12-2.43)	78 (19)	1.42 (0.95-2.11)	169 (17)	1.11 (0.77-1.59)	92 (20)	0.91 (0.61-1.36)	0.005	
BMI 18.5 to <25	764 (9)	1.00	1122 (9)	1.01 (0.92-1.11)	1227 (9)	0.92 (0.84-1.00)	2864 (10)	0.84 (0.78-0.92)	1309 (13)	0.83 (0.75-0.91)	<0.001	0.10
BMI 25 to <30	585 (9)	1.00	838 (9)	0.97 (0.88-1.08)	1019 (10)	1.01 (0.92-1.12)	2157 (10)	0.92 (0.83-1.01)	829 (12)	0.91 (0.81-1.01)	0.008	
BMI 30 to <35	355 (11)	1.00	553 (12)	1.06 (0.93-1.21)	499 (11)	0.87 (0.76-1.00)	1035 (12)	0.89 (0.78-1.00)	348 (13)	0.82 (0.70-0.96)	<0.001	
BMI ≥35	310 (14)	1.00	470 (15)	1.06 (0.91-1.22)	407 (16)	1.03 (0.89-1.20)	638 (14)	0.91 (0.79-1.05)	184 (14)	0.80 (0.66-0.97)	<0.001	
Non alcohol drinker	1146 (12)	1.00	1262 (13)	1.04 (0.96-1.12)	1166 (13)	0.93 (0.86-1.01)	2063 (14)	0.91 (0.85-0.98)	928 (16)	0.89 (0.82-0.98)	<0.001	
>0 to 1 drink/day	822 (9)	1.00	1545 (9)	0.97 (0.89-1.06)	1768 (9)	0.97 (0.90-1.06)	3784 (9)	0.87 (0.81-0.94)	1516 (11)	0.85 (0.78-0.93)	<0.001	
>1 to 3 drinks/day	130 (12)	1.00	278 (13)	1.01 (0.82-1.25)	323 (11)	0.87 (0.71-1.06)	947 (10)	0.77 (0.64-0.93)	311 (12)	0.73 (0.59-0.89)	<0.001	0.16
>3 drinks/day	63 (16)	1.00	136 (19)	1.25 (0.92-1.69)	131 (18)	0.99 (0.73-1.34)	346 (16)	0.88 (0.67-1.16)	119 (16)	0.78 (0.57-1.07)	0.001	
Fair/Poor health	726 (7)	1.00	1074 (7)	1.02 (0.92-1.12)	1292 (8)	1.07 (0.97-1.17)	2979 (8)	0.95 (0.87-1.03)	1307 (10)	0.98 (0.90-1.08)	0.09	
Good health	801 (11)	1.00	1211 (12)	1.02 (0.94-1.12)	1329 (12)	0.97 (0.89-1.06)	2754 (12)	0.90 (0.83-0.97)	1047 (14)	0.82 (0.74-0.90)	<0.001	<0.001
Excellent/ very good health	594 (24)	1.00	879 (24)	1.01 (0.91-1.12)	711 (22)	0.81 (0.73-0.91)	1312 (24)	0.78 (0.71-0.87)	475 (25)	0.70 (0.62-0.80)	<0.001	
Low red meat	1393 (10)	1.00	2161 (10)	1.00 (0.94-1.07)	2264 (10)	0.97 (0.90-1.03)	4475 (10)	0.86 (0.81-0.92)	1742 (12)	0.83 (0.77-0.89)	<0.001	0.69
High red meat	768 (12)	1.00	1060 (13)	1.04 (0.95-1.14)	1124 (12)	0.93 (0.85-1.02)	2665 (12)	0.90 (0.82-0.97)	1132 (14)	0.87 (0.79-0.96)	<0.001	
Low white meat	1038 (11)	1.00	1480 (12)	1.07 (0.99-1.16)	1510 (12)	0.96 (0.88-1.04)	3361 (12)	0.88 (0.82-0.95)	1554 (14)	0.87 (0.80-0.94)	<0.001	0.61
High white meat	1123 (10)	1.00	1741 (10)	0.96 (0.89-1.04)	1878 (10)	0.95 (0.88-1.02)	3779 (10)	0.86 (0.81-0.93)	1320 (11)	0.82 (0.76-0.90)	<0.001	

Low fruit	769 (11)	1.00	1062 (12)	1.05 (0.95-1.15)	1146 (12)	0.94 (0.86-1.03)	2999 (12)	0.89 (0.82-0.96)	1466 (14)	0.84 (0.77-0.92)	<0.001	0.64
High fruit	1392 (10)	1.00	2159 (10)	1.00 (0.93-1.07)	2242 (10)	0.96 (0.90-1.03)	4141 (10)	0.87 (0.82-0.93)	1408 (12)	0.85 (0.79-0.92)	<0.001	
Low vegetables	843 (12)	1.00	1167 (12)	1.01 (0.92-1.10)	1264 (12)	0.93 (0.85-1.02)	2729 (12)	0.85 (0.79-0.92)	1284 (15)	0.85 (0.78-0.93)	<0.001	0.48
High vegetables	1318 (10)	1.00	2054 (10)	1.02 (0.95-1.09)	2054 (10)	0.97 (0.90-1.04)	2054 (10)	0.89 (0.84-0.95)	2124 (5)	0.84 (0.78-0.90)	<0.001	
Vitamin supplement, non-user	778 (12)	1.00	1137 (13)	1.03 (0.94-1.13)	1207 (12)	0.91 (0.83-1.00)	2583 (12)	0.87 (0.80-0.94)	1060 (14)	0.82 (0.74-0.90)	<0.001	0.38
Vitamin supplement, user	1383 (10)	1.00	2084 (10)	1.01 (0.94-1.08)	2181 (10)	0.98 (0.91-1.05)	4557 (10)	0.88 (0.83-0.94)	1814 (12)	0.86 (0.80-0.93)	<0.001	
Never use of postmenopausal hormone therapy	1206 (12)	1.00	1790 (13)	1.06 (0.98-1.14)	1901 (13)	1.00 (0.93-1.08)	3875 (13)	0.89 (0.84-0.96)	1694 (15)	0.88 (0.81-0.95)	<0.001	0.45
Ever user of postmenopausal hormone therapy	948 (9)	1.00	1426 (9)	0.96 (0.89-1.05)	1475 (9)	0.90 (0.83-0.97)	3251 (9)	0.85 (0.79-0.92)	1176 (10)	0.81 (0.74-0.89)	<0.001	

* Proportion of cohort participants in specified category dying during follow-up.

† Multivariate analyses were adjusted for the following factors at baseline: age; body-mass index; race or ethnic group; level of education; alcohol consumption; the number of cigarettes smoked per day, use or nonuse of pipes or cigars, and time of smoking cessation (<1 year, 1 to <5 years, 5 to <10 years, or ≥10 years before baseline); health status; diabetes (yes vs. no); marital status; physical activity; total energy intake; consumption of fruits, vegetables, red meat, white meat, and saturated fat; use or nonuse of vitamin supplements; and use or nonuse of postmenopausal hormone therapy.

‡ P-values for interactions were computed by likelihood ratio tests comparing Cox proportional hazards models with and without cross-product terms for each level of baseline stratifying variable with coffee intake as an ordinal variable. P-values for the lag-analysis come from testing the addition of a cross-product term for time with coffee intake.

Supplementary Table 6: Associations of coffee intake with cause-specific mortality in men of the NIH-AARP Diet and Health Study, by smoking status

	Coffee intake	None		<1 cup/day		1 cup/day		2 or 3 cups/day		≥4 cups/day		p-trend	p-interaction [†]
Outcome	Smoking status	n (%) [*]	HR [†]	n (%) [*]	HR [†] (95%CI)								
Cancer	All	946 (4.5)	1.00	1729 (5)	1.01 (0.93-1.09)	1824 (5.4)	0.96 (0.89-1.04)	5804 (6)	1.00 (0.93-1.07)	3099 (7.3)	1.05 (0.97-1.13)	0.04	0.002
	Never smoker	362 (3.3)	1.00	433 (3.3)	1.01 (0.88-1.16)	358 (3.5)	0.99 (0.85-1.15)	668 (3.2)	0.96 (0.84-1.09)	168 (3.1)	0.97 (0.80-1.17)	0.44	
	Former smoker	422 (5.3)	1.00	995 (5.5)	1.02 (0.91-1.14)	1146 (5.9)	1.00 (0.89-1.11)	3643 (6.1)	1.04 (0.94-1.15)	1543 (6.3)	1.06 (0.95-1.18)	0.14	
	Current smoker	122 (12.2)	1.00	222 (11.1)	0.94 (0.76-1.18)	231 (10.4)	0.81 (0.65-1.00)	1285 (12.1)	0.93 (0.77-1.12)	1308 (13.1)	1.00 (0.83-1.21)	0.03	
Heart disease	All	712 (3.4)	1.00	1193 (3.4)	0.93 (0.85-1.02)	1243 (3.7)	0.92 (0.84-1.01)	3353 (3.5)	0.86 (0.79-0.94)	1626 (3.9)	0.88 (0.80-0.96)	0.005	0.002
	Never smoker	303 (2.7)	1.00	307 (2.4)	0.85 (0.72-1.00)	265 (2.6)	0.88 (0.74-1.04)	488 (2.3)	0.87 (0.75-1.01)	101 (1.9)	0.74 (0.59-0.93)	0.04	
	Former smoker	315 (3.9)	1.00	706 (3.9)	0.97 (0.85-1.11)	746 (3.8)	0.9 (0.79-1.03)	2010 (3.4)	0.84 (0.74-0.95)	804 (3.3)	0.83 (0.73-0.95)	<0.001	
	Current smoker	60 (6)	1.00	126 (6.3)	1.00 (0.74-1.37)	169 (7.6)	1.16 (0.86-1.55)	698 (6.6)	1.06 (0.81-1.38)	665 (6.6)	1.13 (0.87-1.48)	0.25	
Respiratory disease	All	169 (0.8)	1.00	351 (1.0)	1.05 (0.87-1.27)	352 (1)	0.93 (0.77-1.11)	1046 (1.1)	0.83 (0.70-0.98)	594 (1.4)	0.83 (0.69-0.99)	<0.001	0.14
	Never smoker	37 (0.3)	1.00	38 (0.3)	0.82 (0.52-1.31)	28 (0.3)	0.74 (0.45-1.23)	50 (0.2)	0.74 (0.48-1.16)	10 (0.2)	0.63 (0.31-1.27)	0.19	
	Former smoker	95 (1.2)	1.00	241 (1.3)	1.15 (0.9-1.46)	254 (1.3)	1.02 (0.80-1.29)	660 (1.1)	0.88 (0.71-1.10)	258 (1)	0.78 (0.62-1.00)	<0.001	
	Current smoker	34 (3.4)	1.00	67 (3.4)	0.97 (0.64-1.48)	64 (2.9)	0.77 (0.50-1.16)	323 (3)	0.82 (0.57-1.17)	320 (3.2)	0.91 (0.63-1.30)	0.72	
Stroke	All	125 (0.6)	1.00	221 (0.6)	0.99 (0.79-1.24)	222 (0.7)	0.92 (0.73-1.15)	555 (0.6)	0.84 (0.68-1.02)	204 (0.5)	0.70 (0.55-0.88)	<0.001	0.90
	Never smoker	63 (0.6)	1.00	58 (0.4)	0.82 (0.57-1.18)	45 (0.4)	0.75 (0.50-1.10)	92 (0.4)	0.85 (0.60-1.19)	14 (0.3)	0.53 (0.30-0.96)	0.13	
	Former smoker	50 (0.6)	1.00	128 (0.7)	1.08 (0.78-1.50)	145 (0.7)	1.05 (0.76-1.45)	327 (0.5)	0.83 (0.62-1.13)	110 (0.4)	0.74 (0.53-1.04)	<0.001	
	Current smoker	9 (0.9)	1.00	26 (1.3)	1.31 (0.61-2.8)	22 (1)	0.90 (0.41-1.96)	103 (1)	0.97 (0.49-1.94)	73 (0.7)	0.81 (0.4-1.63)	0.12	
Injuries and accidents	All	113 (0.5)	1.00	186 (0.5)	0.97 (0.77-1.23)	202 (0.6)	1.02 (0.80-1.29)	492 (0.5)	0.88 (0.71-1.09)	218 (0.5)	0.84 (0.66-1.06)	0.03	0.33
	Never smoker	45 (0.4)	1.00	64 (0.5)	1.24 (0.84-1.83)	44 (0.4)	1.01 (0.66-1.54)	86 (0.4)	1.05 (0.72-1.52)	26 (0.5)	1.29 (0.79-2.12)	0.68	
	Former smoker	58 (0.7)	1.00	96 (0.5)	0.73 (0.53-1.01)	128 (0.7)	0.87 (0.63-1.18)	294 (0.5)	0.67 (0.50-0.89)	116 (0.5)	0.64 (0.47-0.89)	0.007	
	Current smoker	7 (0.7)	1.00	16 (0.8)	1.24 (0.51-3.03)	21 (0.9)	1.40 (0.59-3.31)	80 (0.8)	1.13 (0.52-2.47)	68 (0.7)	1.01 (0.46-2.21)	0.32	
Diabetes	All	87 (0.4)	1.00	165 (0.5)	1.07 (0.82-1.39)	154 (0.5)	1.00 (0.76-1.31)	310 (0.3)	0.75 (0.59-0.96)	134 (0.3)	0.75 (0.57-1.00)	<0.001	0.95
	Never smoker	39 (0.4)	1.00	40 (0.3)	0.88 (0.56-1.38)	31 (0.3)	0.88 (0.54-1.42)	51 (0.2)	0.77 (0.50-1.18)	10 (0.2)	0.59 (0.29-1.20)	0.11	
	Former smoker	37 (0.5)	1.00	101 (0.6)	1.13 (0.78-1.66)	100 (0.5)	1.06 (0.72-1.55)	202 (0.3)	0.75 (0.53-1.07)	83 (0.3)	0.79 (0.53-1.17)	0.002	
	Current smoker	6 (0.6)	1.00	15 (0.8)	1.09 (0.41-2.86)	12 (0.5)	0.67 (0.24-1.82)	42 (0.4)	0.65 (0.27-1.55)	33 (0.3)	0.58 (0.24-1.42)	0.11	
Infections	All	68 (0.3)	1.00	112 (0.3)	0.95 (0.70-1.29)	124 (0.4)	1.03 (0.76-1.40)	276 (0.3)	0.83 (0.63-1.10)	105 (0.2)	0.67 (0.49-0.93)	0.001	0.69
	Never smoker	21 (0.2)	1.00	29 (0.2)	1.22 (0.69-2.16)	24 (0.2)	1.26 (0.69-2.30)	41 (0.2)	1.17 (0.68-2.03)	6 (0.1)	0.69 (0.27-1.73)	0.51	
	Former smoker	40 (0.5)	1.00	62 (0.3)	0.69 (0.46-1.03)	77 (0.4)	0.77 (0.53-1.14)	162 (0.3)	0.58 (0.41-0.83)	56 (0.2)	0.49 (0.33-0.75)	<0.001	
	Current smoker	3 (0.3)	1.00	16 (0.8)	2.68 (0.77-9.25)	17 (0.8)	2.50 (0.73-8.61)	49 (0.5)	1.75 (0.54 or <7.1)	40 (0.4)	1.68 (0.51-5.52)	0.30	

Other	All	546 (2.6)	1.00	974 (2.8)	1.02 (0.92-1.13)	928 (2.7)	0.92 (0.82-1.02)	2279 (2.3)	0.81 (0.74-0.89)	890 (2.1)	0.71 (0.64-0.80)	<0.001	
	Never smoker	222 (2.0)	1.00	265 (2.0)	1.02 (0.85-1.23)	220 (2.1)	1.04 (0.86-1.26)	345 (1.6)	0.88 (0.74-1.05)	75 (1.4)	0.80 (0.61-1.04)	0.01	
	Former smoker	250 (3.1)	1.00	559 (3.1)	0.98 (0.85-1.14)	565 (2.9)	0.86 (0.74-1.00)	1475 (2.5)	0.79 (0.69-0.91)	502 (2.0)	0.69 (0.59-0.81)	<0.001	0.56
	Current smoker	44 (4.4)	1.00	105 (5.3)	1.21 (0.85-1.72)	95 (4.3)	0.90 (0.63-1.29)	338 (3.2)	0.69 (0.51-0.95)	281 (2.8)	0.63 (0.46-0.87)	<0.001	

* Proportion of cohort participants in specified category dying during follow-up.

† Multivariate analyses were adjusted for the following factors at baseline: age; body-mass index; race or ethnic group; level of education; alcohol consumption; the number of cigarettes smoked per day, use or nonuse of pipes or cigars, and time of smoking cessation (<1 year, 1 to <5 years, 5 to <10 years, or ≥10 years before baseline); health status; diabetes (yes vs. no); marital status; physical activity; total energy intake; consumption of fruits, vegetables, red meat, white meat, and saturated fat; and use or nonuse of vitamin supplements. In addition, risk estimates for death from cancer were adjusted for history of cancer (other than nonmelanoma skin cancer) in a first-degree relative (yes vs. no).

‡ P-values for interactions were computed by likelihood ratio tests comparing Cox proportional hazards models with and without cross-product terms for each level of baseline stratifying variable with coffee intake as an ordinal variable.

Supplementary Table 7: Associations of coffee intake with cause-specific mortality in women of the NIH-AARP Diet and Health Study, by smoking status

	Coffee intake	None		<1 cup/day		1 cup/day		2 or 3 cups/day		≥4 cups/day		p-trend	p-interaction [‡]
Outcome	Smoking status	n (%) [*]	HR [†]	n (%) [*]	HR [†] (95%CI)								
Cancer	All	783 (3.8)	1.00	1153 (3.8)	0.99 (0.90-1.08)	1313 (4.2)	1.01 (0.92-1.10)	3110 (4.6)	0.98 (0.90-1.06)	1391 (6.2)	1.02 (0.93-1.12)	0.80	0.005
	Never smoker	385 (2.9)	1.00	460 (2.8)	0.95 (0.83-1.09)	528 (3.2)	1.03 (0.90-1.18)	776 (2.8)	0.91 (0.80-1.03)	176 (2.9)	0.93 (0.78-1.12)	0.13	
	Former smoker	257 (4.3)	1.00	493 (4.3)	1.02 (0.88-1.19)	522 (4.3)	0.95 (0.82-1.11)	1315 (4.5)	0.99 (0.87-1.13)	439 (5.1)	1.06 (0.91-1.24)	0.37	
	Current smoker	141 (8.3)	1.00	199 (8.3)	1.01 (0.82-1.26)	263 (9.5)	1.12 (0.91-1.38)	1019 (9.4)	1.09 (0.91-1.30)	776 (9.8)	1.09 (0.91-1.30)	0.49	
Heart disease	All	461 (2.2)	1.00	673 (2.2)	1.00 (0.89-1.13)	683 (2.2)	0.91 (0.81-1.03)	1379 (2)	0.85 (0.76-0.95)	505 (2.2)	0.77 (0.67-0.87)	<0.001	0.05
	Never smoker	247 (1.9)	1.00	291 (1.8)	1.00 (0.84-1.18)	271 (1.7)	0.86 (0.72-1.02)	378 (1.4)	0.80 (0.68-0.94)	86 (1.4)	0.86 (0.67-1.10)	0.01	
	Former smoker	153 (2.5)	1.00	269 (2.4)	0.92 (0.76-1.13)	287 (2.3)	0.89 (0.73-1.09)	560 (1.9)	0.82 (0.68-0.98)	127 (1.5)	0.61 (0.48-0.77)	<0.001	
	Current smoker	61 (3.6)	1.00	113 (4.7)	1.29 (0.95-1.77)	125 (4.5)	1.17 (0.86-1.59)	440 (4.1)	1.10 (0.84-1.43)	292 (3.7)	1.00 (0.76-1.32)	0.10	
Respiratory disease	All	187 (0.9)	1.00	315 (1)	1.09 (0.91-1.31)	279 (0.9)	0.84 (0.69-1.01)	698 (1)	0.79 (0.67-0.93)	312 (1.4)	0.68 (0.57-0.83)	<0.001	0.43
	Never smoker	45 (0.3)	1.00	42 (0.3)	0.80 (0.52-1.22)	43 (0.3)	0.77 (0.50-1.17)	66 (0.2)	0.81 (0.55-1.20)	11 (0.2)	0.65 (0.33-1.28)	0.32	
	Former smoker	85 (1.4)	1.00	194 (1.7)	1.26 (0.97-1.63)	160 (1.3)	0.90 (0.69-1.17)	320 (1.1)	0.78 (0.61-0.99)	99 (1.2)	0.65 (0.48-0.87)	<0.001	
	Current smoker	57 (3.4)	1.00	78 (3.2)	1.02 (0.73-1.45)	76 (2.7)	0.84 (0.60-1.19)	312 (2.9)	0.85 (0.64-1.14)	202 (2.6)	0.73 (0.54-0.98)	0.007	
Stroke	All	115 (0.6)	1.00	191 (0.6)	1.15 (0.91-1.45)	168 (0.5)	0.89 (0.70-1.13)	369 (0.5)	0.93 (0.75-1.15)	123 (0.5)	0.82 (0.63-1.08)	0.03	0.49
	Never smoker	66 (0.5)	1.00	86 (0.5)	1.09 (0.79-1.50)	78 (0.5)	0.90 (0.64-1.26)	129 (0.5)	0.97 (0.72-1.32)	28 (0.5)	1.00 (0.64-1.57)	0.82	
	Former smoker	32 (0.5)	1.00	81 (0.7)	1.30 (0.86-1.96)	56 (0.5)	0.78 (0.50-1.21)	141 (0.5)	0.88 (0.59-1.30)	41 (0.5)	0.87 (0.55-1.40)	0.14	
	Current smoker	16 (0.9)	1.00	24 (1)	1.11 (0.59-2.10)	34 (1.2)	1.25 (0.69-2.29)	99 (0.9)	1.03 (0.60-1.76)	54 (0.7)	0.76 (0.43-1.33)	0.04	
Injuries and accidents	All	57 (0.3)	1.00	91 (0.3)	1.11 (0.80-1.55)	114 (0.4)	1.27 (0.92-1.76)	153 (0.2)	0.77 (0.56-1.06)	47 (0.2)	0.62 (0.42-0.93)	<0.001	0.32
	Never smoker	34 (0.3)	1.00	40 (0.2)	1.00 (0.63-1.59)	49 (0.3)	1.15 (0.74-1.80)	61 (0.2)	0.86 (0.56-1.33)	11 (0.2)	0.70 (0.35-1.40)	0.15	
	Former smoker	19 (0.3)	1.00	41 (0.4)	1.13 (0.65-1.95)	43 (0.4)	1.05 (0.61-1.80)	56 (0.2)	0.59 (0.35-1.01)	15 (0.2)	0.54 (0.27-1.08)	<0.001	
	Current smoker	4 (0.2)	1.00	9 (0.4)	1.70 (0.52-5.56)	22 (0.8)	3.59 (1.23-10.5)	36 (0.3)	1.52 (0.54-4.29)	21 (0.3)	1.13 (0.39-3.31)	0.049	
Diabetes	All	71 (0.3)	1.00	95 (0.3)	1.00 (0.73-1.36)	93 (0.3)	0.91 (0.67-1.25)	140 (0.2)	0.77 (0.57-1.03)	47 (0.2)	0.76 (0.51-1.12)	0.03	0.36
	Never smoker	43 (0.3)	1.00	48 (0.3)	0.99 (0.65-1.50)	43 (0.3)	0.85 (0.55-1.31)	50 (0.2)	0.71 (0.47-1.08)	7 (0.1)	0.49 (0.22-1.10)	0.02	
	Former smoker	18 (0.3)	1.00	38 (0.3)	1.13 (0.64-1.99)	36 (0.3)	1.09 (0.61-1.93)	58 (0.2)	0.95 (0.55-1.63)	18 (0.2)	1.03 (0.53-2.03)	0.66	
	Current smoker	10 (0.6)	1.00	9 (0.4)	0.70 (0.28-1.78)	14 (0.5)	0.80 (0.35-1.87)	31 (0.3)	0.58 (0.28-1.21)	22 (0.3)	0.57 (0.26-1.26)	0.18	
Infections	All	65 (0.3)	1.00	77 (0.3)	0.82 (0.59-1.15)	96 (0.3)	0.94 (0.68-1.29)	152 (0.2)	0.69 (0.51-0.94)	58 (0.3)	0.69 (0.48-1.00)	0.02	0.28
	Never smoker	39 (0.3)	1.00	31 (0.2)	0.66 (0.41-1.06)	39 (0.2)	0.77 (0.49-1.20)	49 (0.2)	0.62 (0.40-0.96)	9 (0.1)	0.55 (0.26-1.14)	0.07	
	Former smoker	21 (0.3)	1.00	32 (0.3)	0.84 (0.48-1.47)	43 (0.4)	1.09 (0.64-1.85)	58 (0.2)	0.67 (0.40-1.12)	17 (0.2)	0.66 (0.34-1.27)	0.05	
	Current smoker	5 (0.3)	1.00	14 (0.6)	1.88 (0.67-5.25)	14 (0.5)	1.48 (0.53-4.14)	45 (0.4)	1.32 (0.52 or >25)	32 (0.4)	1.37 (0.53-3.54)	0.79	

Other	All	422 (2.0)	1.00	626 (2.1)	1.02 (0.90-1.16)	642 (2.0)	0.94 (0.83-1.07)	1139 (1.7)	0.79 (0.71-0.89)	391 (1.7)	0.74 (0.64-0.85)	<0.001	
	Never smoker	223 (1.7)	1.00	301 (1.9)	1.13 (0.95-1.35)	294 (1.8)	1.03 (0.86-1.23)	359 (1.3)	0.81 (0.68-0.96)	76 (1.2)	0.80 (0.62-1.05)	<0.001	
	Former smoker	138 (2.3)	1.00	225 (2.0)	0.86 (0.69-1.06)	262 (2.1)	0.88 (0.72-1.09)	510 (1.7)	0.79 (0.65-0.96)	143 (1.7)	0.75 (0.59-0.95)	0.01	0.07
	Current smoker	61 (3.6)	1.00	100 (4.2)	1.12 (0.81-1.55)	86 (3.1)	0.82 (0.59-1.14)	270 (2.5)	0.70 (0.53-0.93)	172 (2.2)	0.62 (0.46-0.83)	<0.001	

* Proportion of cohort participants in specified category dying during follow-up.

† Multivariate analyses were adjusted for the following factors at baseline: age; body-mass index; race or ethnic group; level of education; alcohol consumption; the number of cigarettes smoked per day, use or nonuse of pipes or cigars, and time of smoking cessation (<1 year, 1 to <5 years, 5 to <10 years, or ≥10 years before baseline); health status; diabetes (yes vs. no); marital status; physical activity; total energy intake; consumption of fruits, vegetables, red meat, white meat, and saturated fat; use or nonuse of vitamin supplements; and use or nonuse of postmenopausal hormone therapy. In addition, risk estimates for death from cancer were adjusted for history of cancer (other than nonmelanoma skin cancer) in a first-degree relative (yes vs. no).

‡ P-values for interactions were computed by likelihood ratio tests comparing Cox proportional hazards models with and without cross-product terms for each level of baseline stratifying variable with coffee intake as an ordinal variable.